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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,429	12/12/2003	William S. Wong	D/A3602	3875
7590 Patent Documentation Center Xerox Corporation Xerox Square 20th Floor 100 Clinton Ave. S. Rochester, NY 14644			EXAMINER QUACH, TUAN N	
			ART UNIT	PAPER NUMBER
			2826	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/20/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/734,429

Applicant(s)

WONG ET AL.

Examiner

Tuan Quach

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18, 20-26 and 33 is/are pending in the application.
- 4a) Of the above claim(s) 6, 9 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8, 10-17, 20-26 and 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Tuan Quach
Primary Examiner

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 24, 2007 has been entered.

Applicant adds new claim 32 and states claim 27-32 are cancelled (listing of claim page 5). Accordingly new claim 32 is renumbered 33.

Claims 1, 5, 7, 8, 10, 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the relationship between the drain electrode and the first or second electrode cannot be determined and appears erroneous, see claim 10, which recites the electrode is the drain electrode. Which electrode of the first and second electrode is the drain electrode? Note applicant amended the claim to recite "a drain electrode . . ." in claim 1 line 7. It appears that applicant intended to recite one of the electrode to be drain electrode but fails to make the corresponding change with regard to the first or second electrode. "the display" in claim 1 line 7 lacks antecedent basis.

In claim 5, "an electrode" is vague and unclear as to which electrode is being referred to.

In claims 7, 8, 22, line 1 or 2, "a semiconductor" is non-sequitur regarding the remaining structures or components of the device; it cannot be determined from the claims how such semiconductor is used, for which components such semiconductor corresponds to.

In claim 5 it cannot be determined which electrode is being referred to or if this recites another electrode; in claim 10, it cannot be determined which electrode is being referred to in "the electrode" as there are first electrode, second electrode, and drain electrode in claim 1, furthermore, the claim is erroneous since a drain electrode was only recited in the base claim above. See [0014], [0015] wherein the channel is said to be disposed between the second and third electrode with the third electrode being the drain electrode. This appears to contradict claim 1, wherein the channel is between the first and second electrode. Applicant is requested to particularly state which electrodes in the claim correspond to which electrodes in the specification including the particular support thereof.

Claims 1-3, 7, 8, 10-17, 20-26, 33 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. See the issue delineated above regarding claims 1, 5, wherein there are now first electrode, second electrode and drain electrode as in the amended claim 1; while one of such electrode appears to be redundant in view of the amended feature reciting the drain electrode, to

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the extent that applicant intends to maintain all such electrodes in claim 1, such does not appear to be supported by or sufficiently described by the original disclosure. Applicant is requested to point out the particular portions in the original disclosure supporting the claims as now amended. In addition, the support or description regarding a drain electrode of the thin film transistor directly coupled to the display or sensing media, or of encapsulation between media layer and drain electrode and vias etched in the encapsulation layer coupling the media the media layer to the drain electrode, cannot be found. See [0017] which is only disclosing vias connecting the TFT layer, presumably layer 212, but silent regarding any connection to the drain electrode. Applicant is requested to point out any particular portion of the instant disclosure supporting or describing the claimed invention as amended.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5, 7, 8, 10-17, 20-26, insofar as in compliance with 35 U.S.C. 112, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase in view of the admitted prior art. (APA) and Mosier.

Kawase 2003/0141807 teach thin film transistor having increased channel width to increase mobility in organic semiconductor. Kawase teaches, [0001]-[0129], display devices having pixels including organic material and the display elements having associated thin film transistors operating on the pixel of the display wherein the problem of low mobility in organic TFTs was discussed and the solution of increasing the channel width and reducing the channel length is also taught, e.g., [0093]-[0096], wherein such would permit optimization of drain current to permit the use of relatively low mobility organic/polymer transistor. Although Kawase lack the explicit recitation that the channel width being longer than the shorter of either dimension of the associated pixel, nonetheless, such would follow given the magnitude of the channel width employed in Kawase, to be extremely long channel width, [0095], including in excess of 1000 microns thus is not limited to below or shorter than either pixel dimensions and since the pixel dimensions are acknowledged by applicant to be typically range from 85 to 500 microns, e.g., instant specification [0026]. Regarding the feature concerning the gate line coupling and first data line, such would have been conventional and obvious, as the corresponding date lines, and drive and sensing circuits for connections to the TFTs, such have been conventional and necessary to complete the necessary

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connections, e.g., as evidenced in Kawase, [008], Figs. 2, 4 wherein the corresponding connections to the data lines and to the gate lines of the respective transistors are apparent, Fig. 8, [0030], [0039], [0079] and as acknowledged in the instant specification, [0019], Fig. 2, [0014]. The provision regarding connection the drain electrode directly coupled to the display or sensing media would have been conventional and obvious as shown in Mosier, 6,343,425 B1, column 3 lines 38-60 wherein electronic signals can be provided to the display system to cause display of visual indicia.

Regarding claims 2 and 26, it would have been obvious to have optimized the ratio of channel width to length to obtain the desired mobility in view of the teachings of the prior art above, including [0096], e.g., to maximize the channel width and to minimize the channel length of the organic TFTs and such would have been obvious and apparent when the conventional organic material having the appropriate mobility is employed. Regarding claim 3, the use of pixel squares would have obvious as admitted by applicant, instant specification [0024]. Regarding claim 4 5, 10, the use of one or at least two bends in the channel is shown in Kawase, Fig. 13, including surrounding the drain electrode, [0094]. Regarding claims 7, 8, and 22 the use of organic or polymeric semiconductor material is well known and further taught in Kawase supra, including [0107], and wherein the selection of the numerical value of the mobility would have been obvious given the appropriate corresponding material employed. Regarding claim 11, the use of backlit liquid crystal material is well known as admitted by applicant, [0031]; alternatively, such use of conventional material is notoriously conventional and would not require any inventiveness and would have been obvious. Regarding claims

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12-17, the use of gate line, e.g., 108, to couple to the gate electrode, e.g., 104, and channel surrounds the drain electrode, and the source and drain electrode and the channel associated therewith is also shown, Fig. 13. Regarding claims 20-21, and 23-25 employing associated desired number of thin film transistors including to two or three transistors, and thus gate lines, corresponding data lines, and drive and sensing circuits for connections to the TFTs, such have been obvious to complete the necessary connections, e.g., as evidenced in Kawase, [008], Figs. 2, 4 wherein the corresponding connections to the data lines and to the gate lines of the respective transistors are apparent, Fig. 8, [0030], [0039], [0079] and as acknowledged in the instant specification, [0019], Fig. 2, [0014].

Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase taken with APA and Mosier as applied to claims 1-5, 7, 8, 10-17, 20-26 above, and further in view of Yamazaki et al.

In addition to the reasons delineated above, Yamazaki et al. 2002/00272229 further evidences the additional desired numbers of gate line, e.g., first gate line, second gate line, and third gate lines, Fig. 11B, [0118]. It would have been further obvious to recite the desired number of gate lines including three gate lines as further evidenced by Yamazaki et al. The completion of connections for drive circuits and sensing circuits would have been conventional and obvious as delineated above.

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase taken with APA and Mosier as applied to claims 1-5, 7, 8, 10-17, 20-26 above, and further in view of Pichler.

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The references applied above do not recite the encapsulation layer with via openings for connection therethrough as in claim 32.

Pichler 2004/0191963 A1 teach the provision of an encapsulation layer having openings or holes therein over the corresponding active areas of the thin film electronic devices. See [0006], [0007], [0018], [0023].

It would have been obvious to one skilled in the art in practicing the above invention to have employed the encapsulation having vias therein at corresponding active areas as taught by Pichler wherein such areas can be protected and wherein selective regions can be accessed.

Applicant's arguments with respect to claims 1-5, 7, 8, 10-17, 20-26 and 32 have been considered but are moot in view of the new ground(s) of rejection.

It is noted that regarding applicant's request for an interview made on page 2 of the remarks filed January 24, 2007, during a telephone call on April 12, 2007 informing applicant's attorney Kevin Chen that a non-final action (i.e., this action) will be issued in view of the newly amended features in the claims, it was indicated that the interview request was withdrawn in view of the non-finality of such action, and that a request for interview, if desired, after the issuance of the non-final action, will be granted. No interview on any inventive or substantive matter was conducted during said telephone conversation. Naturally, any interview request should normally be made before a final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Tuan Quach whose telephone number is 571-272-1717. The examiner can normally be reached on M-F from 8:30 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Sue Purvis can be reached on 571-272-1236. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tuan Quach
Primary Examiner